

east and west, five feet wide, north and south, and two feet three inches deep. The bottom is formed of concrete, the sides and ends of rubbed stone, and it was originally covered with a slab six inches thick, but the covering disappeared ages ago, and the tomb has remained filled with rubbish.

Let no one, however, imagine that this is the original tomb of the Confessor. It is stated by the oldest authorities, quoted by Widmore, that St. Edward was buried beneath the high altar, that his remains were afterwards removed to a higher place, and then again to another still higher; while no doubt can possibly exist that his dust still reposes in the shrine prepared for it by King Henry the Third.

This crux will receive considerable elucidation from three facts: 1st. That the floor of the Confessor's church, as I ascertained some time ago, was much lower than the floor of the present church: 2nd. That the medieval architects most carefully preserved all consecrated remains of whatever kind: 3rd. That the present church is raised upon the debris of a former edifice, some of which are formed with fresh lime into concrete.

St. Edward was unquestionably interred near or probably beneath the relics contained in the high altar of his church, for such is usually the position of a founder's tomb, and it may be fairly inferred that the tomb just discovered was only the temporary resting-place of the bones of the Confessor, and of the relics which he had obtained in his visits to the continent.

The demolition of the Confessor's church, and the erection of the present noble edifice, were probably going on for years before divine service ceased to be celebrated at the altar of St. Peter; but when the new church had so far advanced, that the level of its floor was determined, and the destruction of the remaining portion of the old church became necessary, for the continuation of the works; it was then that the tomb in question was probably prepared as a receptacle for the bones of the saints, until their appropriate places in the new church were arranged. Nearly two hundred years after the death of the Confessor, his remains were removed by Henry the Third with extraordinary pomp, to the once magnificent shrine they now occupy. The old shrine was thus left vacant, and now, after the lapse of six centuries, it is presented to our view as the most appropriate spot that could be conceived for the mortal portion of the most illustrious men of modern times.

Now, Sir, Nelson put a stop to the wars of Europe by sea; the idea which fired his mind on rushing to battle, was "Victory, or Westminster Abbey!" but carelessness or indifference to the hero's aspirations decreed a public funeral in St. Paul's: Wellington put a stop to the wars of Europe by land—there will be no more wars—the playing at soldiers may be iniquitously continued for state purposes—but there will be no more wars, the machinist and the chemist would enter the field and mow down like grass in a few hours the finest army that ever stood before the sun, and render war an impossibility. Here, then, Sir, is my proposition; on the death of Wellington, I would inter his corpse in the vacant tomb of St. Edward, and I would translate the body of Nelson to his side in the same tomb. The sides of the mausoleum should be raised 12 inches from the floor, with slabs of glass, and top covered with two slabs of polished transparent glass six inches thick; but lest this mausoleum should be too dazzling, it might usually be concealed by a rich carpet. Thus enshrined in England's very heart of hearts, in the tomb of a saint and king, would superbly repose the ashes of those heroes who were at once the latest and the greatest benefactors of mankind.

I am, Sir, yours, &c.,

WILLIAM BARDWELL.

4, Great Queen-street, July 26.

CLAY-BUILT WALLS.

HAVING read in two or three of your valuable papers, some questions and answers upon the plastering, &c., of clay walls; and in *THE BUILDER* of this day, your correspondent, "An Old Architect," having described the French method of building, I am induced to give your readers two methods, as adopted years ago in Suffolk and Essex. I well re-

member upwards of thirty years ago being employed by a very eccentric character to finish the walls of a barn, after several bricklayers who had worked upon them had refused to do so any longer, in consequence of the hardness of the work. I had to carry the walls up about ten feet in height from where they left off, and hard work indeed it was, having to stand upon the walls to raise the quoins, to bed and lay the clay lumps. These were composed of clay and chopped straw, well worked together, and dried after the Egyptian method, in the sun; the dimensions of each lump or brick was, to the best of my recollection, two feet long, one foot wide, and nine inches thick. The bed of mortar I used was about three-quarters of an inch thick. The walls when up were well protected by projecting gables and eaves, and limewashed only. The foundations on which they were laid, was of rubble work, but for cottages, barns, or any other building, I should recommend, on a proper footing, a brick foundation of the same thickness as the clay bricks intended to be laid upon it, carried up high enough to keep out rats, mice, &c. The clay walls built by me stood well on the outside without plastering; in the inside they were damaged by rats and mice. I do not consider them fit for barns, in consequence of the soft nature of the clay, but in order to prevent the plastering peeling off cottage walls, whether inside or out, I believe if a proper quantity of fine shingly stones, say through a quarter-inch diamonded sieve, be well mixed and beat up with the clay and straw, it will materially tend to harden the bricks, and as well prevent vermin so easily introducing themselves into the walls; and if they were roughed over on being taken soft from the mould, similar to a first coat of plastering on the two faces, the plastering, whether a thick coat or thin, externally or internally, would have a far better key to keep it on than by having a face of the clay only to be laid upon. The barn I have alluded to stood several years, would have stood many more, but was pulled down from the property changing owners. I have seen cottages in Essex which were built between thirty and forty years ago, of clay puddled, that is, used in a very soft state, between a case of boards. They were then plastered over, and are now standing, occupied, and in an apparently sound state. I might have added more upon the subject, but not wishing to trespass upon the columns of *THE BUILDER*,

I am, Sir, &c.,

A. J. GREEN, Bricklayer.

Sudbury, Suffolk, July 16th, 1847.

THE TUBULAR BRIDGE OVER THE MENAI STRAIT.

THE interest with which this enormous undertaking (to be called the Britannia-bridge) is watched, leads us to give the following extracts from a note book, inserted in the *Manchester Examiner*—

"If we suppose ourselves stationed in a boat in the middle of the Menai Strait, a few hundred yards distant from the new bridge on the south side, and suppose it finished, we shall see a wonder of the world of this kind; first, there is the middle pier rising out of the water founded on the Britannia rock, from which the bridge takes its name; this rock can be seen at low water; it is covered at high water. The breadth of this pier is 62 feet by 53 feet, and 1 inch. The blocks of stone are 7 and 8 feet long, by 3 and 1 feet in breadth and deepness; and they rise stone upon stone, until the pier is 230 feet high.

At the distance of 460 feet on each side of this centre pier there rise, near to the water's edge, two other piers of the same gigantic breadth and height; while, on each side of these two piers, at the distance of 250 feet, there rise two walls. Continuing outwards, the wall on our right hand on the Carnarvon shore does not extend its ponderous bulk far back, for the land is high and bold, and the railway comes along its elevated brow, and at once lays hold of the bridge; but on our left hand, which is the Anglesea shore, the wall is the forebend and end of a mighty embankment, on which the railway is raised to the level of the bridge.

There, then, are the four spaces before us, across which, in the iron tubes, the railway is

laid, viz.: two spaces on each side of the centre pier of 460 feet each (let the reader measure 460 feet on a street or on a road, and he will wonder at the vastness of this structure), and two more spaces of 250 feet respectively at each end. The tubes are eight in number, each of them 30 feet high on the exterior side, and 27 feet high in the interior; each is 14 feet wide, and they are laid in couples parallel to each other. Taking ourselves in our boat underneath the bridge, and looking up, glancing from the Carnarvon side of the strait, we see two tubes, rather, we should say, masses of iron, for they do not seem to be tubes, lying side by side from the wall already named across the space of 250 feet; they have each a hold upon the stone-work, several feet at each end, and they rest upon moveable rollers and balls made of gun-metal, the hardest known; those rollers and balls resting on beds of metal, and moving outwards or inwards as the massive tubes of iron expand with heat or contract with cold.

Next we see two others of the same height and width, viz., 30 feet high, and 14 feet wide, lying side by side across the next space of 460 feet, and resting on the masonry as the others. Thirdly, we see two more lying side by side across a space of 460 feet; and lastly, two crossing the space of 250 feet. In the whole, with the breadth of the piers and the landward buildings, the length of the bridge is one-third of a mile.

In height the three piers are, as already said, 230 feet, but they are 70 feet higher than the tubes; these are so massive, that their actual elevation above the water seems less than it really is; and so dead and inelegant to the eye, that it was necessary to raise the piers 70 feet above them, to give a show of elegance to the structure. Measuring from low water mark to the bottom of the tubes, the height is 130 feet—the tubes being 30 feet on the side, and the piers 70 feet above their upper surface. As ornaments to the two walls which rise upon each shore, are four lions, two at each end of the bridge; the lions contain about 8,000 cubic feet of stone. They lie couched, and yet the height of each is 12 feet; the greatest breadth across the body is 9 feet; the length 25 feet; the breadth of each paw 2 feet 4 inches. As we are now so high as to see the lions in detail, we may look into the interior of the iron tubes. They are made of plates of iron, of various thicknesses, rivetted together; the iron increases in thickness as we proceed towards the centre. We now see that the roofs of the tubes are formed of cells, and also the floors; those cells are formed of iron plates set on edge, the cells of the roof being within a fraction of 1 foot 9 inches square; and those of the floor being 1 foot 9 inches wide, and 2 feet 3 inches deep—the rails on which the trains run are laid on those cells of the floor. The flat bottom, the two upright sides, and the flat roof of each tube are formed of plates, the thinnest of which is $\frac{3}{4}$ of an inch, and the thickest 12 $\frac{1}{16}$ ths of an inch; but the number of them laid together, and the internal joinings, cannot be yet explained. The weight of each of the four long tubes will be about 1,300 tons; the weight of each of the four short ones about 600 tons—in the whole, there will be at least 7,600 tons of iron used. No contracting estimate of the expense of the iron part of the work has been made, as the work may cost more or less, according to circumstances. The masonry was contracted for by B. J. Nowell and Co., at 130,000*l.*; but, from alterations in the plans, it will cost (suppose no further alterations be made), 200,000*l.* They expect to finish the masonry by August, 1848,—it will contain one million and a half cubic feet of stone.

When I was there in May, fifty vessels of 60 or 70 tons each, were employed in conveying the stones to the works; the red sandstone, of which the inside courses are built, from Runcorn; the blue limestone, of which the outside courses are built, from the sea shores of Anglesea. The quarries on the Anglesea shores, opened for this work, extended over 20 miles. In the whole, there were 1,300 men employed, 600 of them at the bridge, the fortnightly wages of the latter amounted to 1,300*l.*; 3,000 cubic feet of timber had been used at that time for stages and scaffolding. Two steam-engines were at work on each shore, and a third was being erected on the Britannia rock, in the centre of the Strait, to hoist